IN THE CLAIMS:

The current claims follow. For claims not marked as amended in this response, any difference in the claims below and the previous state of the claims is unintentional and in the nature of a typographical error.

1. (Currently Amended) A method ~~for determining the thickness of a wall of a graphic model~~, comprising:
loading a graphic model;
generating a surface mesh on ~~the~~ faces of the model;
generating an internal body topology of the graphic model, corresponding to the surface mesh;
identifying a first element in a first wall side of the graphic model;
traversing the internal body topology to identify a second element in a second wall side of the graphic model, wherein the traversing is performed on the shortest path between the first element and the second element;
measuring the distance between the first element and the second element; and
storing ~~a wall thickness, the wall thickness corresponding to~~ the measured distance.

2. (Original) The method of claim 1, wherein the internal body topology is a 3D volume meshing, tetrahedron-type topology.

3. (Original) The method of claim 1, wherein the internal body topology is a 3D grid mapping.

4. (Original) The method of claim 3, wherein the traversal direction is along the normal vector of the mesh element using the 3D grid mapping topology for efficient searching.

5. (Original) The method of claim 3, wherein the traversal range is guided by the normal vector of the mesh element and is within a range of angles using the 3D grid mapping topology for efficient searching.

6. (Original) The method of claim 1, wherein the mesh points are projected onto the faces to achieve accurate results.

7. (Original) The method of claim 1, further comprising adding sampling points to the surface mesh for more accurate results.

8. (Original) The method of claim 3, wherein the internal body topology is represented as cubes, and is maintained by a tree structure to perform efficient searching.

9. (Previously Presented) A method for determining the thickness of a wall of a graphic model, comprising:
identifying a first element in a surface mesh of a model;
projecting the first element onto a face of the model to identify a first projected point;
determining a face normal direction at the projected point;
searching for a second element in the surface mesh of the model, guided by the face normal direction;
identifying the second element in the surface mesh of the model;
projecting the second element onto a face of the model to identify a second projected point; and
determining and storing the distance between the first element and the second element.

10. (Original) The method of claim 9, wherein the searching is performed from the first element and in the face normal direction.

11. (Currently Amended) A data processing system ~~having at least~~ comprising a processor and accessible memory, ~~comprising:~~ the data processing system configured to perform the steps of:

~~means for~~ loading a graphic model;

~~means for~~ generating a surface mesh on ~~the~~ faces of the model;

~~means for~~ generating an internal body topology of the graphic model, corresponding to the surface mesh;

~~means for~~ identifying a first element in a first wall side of the graphic model

~~means for~~ traversing the internal body topology to identify a second element in a second wall side of the graphic model;

~~means for~~ measuring the distance between the first element and the second element; and

~~means for~~ storing ~~a wall thickness, the wall thickness corresponding to~~ the measured distance.

12. (Original) The data processing system of claim 11, wherein the internal body topology is a 3D volume meshing, tetrahedron-type topology.

13. (Original) The data processing system of claim 11, wherein the internal body topology is a 3D grid mapping.

14. (Original) The data processing system of claim 13, wherein the traversal direction is along the normal vector of the mesh element using the 3D grid mapping topology for efficient searching.

15. (Original) The data processing system of claim 13, wherein the traversal range is guided by the normal vector of the mesh element and is within a range of angles using the 3D grid mapping topology for efficient searching.

16. (Original) The data processing system of claim 11, wherein the mesh points are projected onto the faces to achieve accurate results.

17. (Currently Amended) The data processing system of claim 11, ~~further comprising means for~~ wherein the data processing system is also configured to perform the step of adding sampling points to the surface mesh for more accurate results.

18. (Original) The data processing system of claim 13, wherein the internal body topology is represented as cubes, and is maintained by a tree structure to perform efficient searching.

19. (Previously Presented) A data processing system having at least a processor and accessible memory, comprising:
means for identifying a first element in a surface mesh of a model;
means for projecting the first element onto a face of the model to identify a first projected point;
means for determining a face normal direction at the projected point;
means for searching for a second element in the surface mesh of the model, guided by the face normal direction;
means for identifying the second element in the surface mesh of the model;
means for projecting the second element onto a face of the model to identify a second projected point; and
means for determining and storing the distance between the first element and the second element.

20. (Original) The data processing system of claim 19, wherein the searching is performed from the first element and in the face normal direction.

21. (Currently Amended) A computer program product having instructions stored in a machine usable medium, comprising:
instructions for loading a graphic model;
instructions for generating a surface mesh on ~~the~~ faces of the model;

instructions for generating an internal body topology of the graphic model, corresponding to the surface mesh;

instructions for identifying a first element in a first wall side of the graphic model

instructions for traversing the internal body topology to identify a second element in a second wall side of the graphic model;

instructions for measuring the distance between the first element and the second element; and

instructions for storing ~~a wall thickness, the wall thickness corresponding to~~ the measured distance.

22. (Original) The computer program product of claim 21, wherein the internal body topology is a 3D volume meshing, tetrahedron-type topology.

23. (Original) The computer program product of claim 21, wherein the internal body topology is a 3D grid mapping.

24. (Original) The computer program product of claim 23, wherein the traversal direction is along the normal vector of the mesh element using the 3D grid mapping topology for efficient searching.

25. (Original) The computer program product of claim 23, wherein the traversal range is guided by the normal vector of the mesh element and is within a range of angles using the 3D grid mapping topology for efficient searching.

26. (Original) The computer program product of claim 21, wherein the mesh points are projected onto the faces to achieve accurate results.

27. (Original) The computer program product of claim 21, further comprising instructions for adding sampling points to the surface mesh for more accurate results.

28. (Original) The computer program product of claim 23, wherein the internal body topology is represented as cubes, and is maintained by a tree structure to perform efficient searching.

29. (Previously Presented) A computer program product having instructions stored in a machine usable medium, comprising:
instructions for identifying a first element in a surface mesh of a model;
instructions for projecting the first element onto a face of the model to identify a first projected point;
instructions for determining a face normal direction at the projected point;
instructions for searching for a second element in the surface mesh of the model, guided by the face normal direction;
instructions for identifying the second element in the surface mesh of the model;
instructions for projecting the second element onto a face of the model to identify a second projected point; and
instructions for determining and storing the distance between the first element and the second element.

30. (Original) The computer program product of claim 29, wherein the searching is performed from the first element and in the face normal direction.